



August 28, 2006

Scott Lobdell
Van Cleef Engineering Associates
630 Churchmans Road, Ste. 105
Newark, DE 19702

RE: PLUS review – PLUS 2006-07-02; Preserve

Dear Mr. Lobdell:

Thank you for meeting with State agency planners on August 2, 2006 to discuss the proposed plans for the Preserve project to be located on Dutch Neck Road in New Castle County.

According to the information received, you are seeking site plan approval through the County for 264 residential units on 310 acres.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as New Castle is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. *Our office*

notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.

State Strategies/Project Location

- This project is located in Investment Level 3 according to the Strategies for State Policies and Spending. This site is also located in the New Castle County Growth Zone. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments will support growth in these areas but please be advised that the State may have other priorities in the near term future. It appears that this site is in a Level 3 area because of its proximity to the Augustine State Wildlife Area and the Thousand Acre Marsh Natural Area. We encourage you to design the site with respect for the environmental features which are present.

Street Design and Transportation

- A traffic impact study will be required for this development.
- Dutch Neck Road is classified as a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- The plan for the development should include a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontage of the site.
- If a buildable connection is possible, the developer should provide a stub street to the adjoining property on the south (Tax Parcel 13-004.00-008)

Natural and Cultural Resources

- While this project is in Level 3, The Division of Historical and Cultural Affairs is opposed to this development because of the large number of historic properties in this vicinity listed in the National Register of Historic Places. In the event New Castle County approves this project, The DHCA would like the opportunity to examine the area for archaeological sites and learn something about their location, nature, and extent prior to any construction activities.

- The DHCA requests that sufficient landscaping be used along the road to block the view of this development from the nearby historic properties.
- Statewide Wetland Mapping Project (SWMP) maps indicate the presence of estuarine and palustrine wetlands along much of the north/south boundary and the eastern portions of the site. Vegetated buffers of no less than 100 feet (preferably 300 feet) should be employed from the edge of the wetland complex.
- To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas
- DNREC has not surveyed this property; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site that would be affected by project activities. However, DNREC does have records of several rare plant species and state-rare fish species within wetlands associated with Thousand Acre Marsh. Therefore, it is important that at least a 300-foot vegetative buffer remain along the edge of the marsh areas to protect water quality and public lands. There should not be lot lines or infrastructure within this buffer zone. In addition, the buffer should be placed in a permanent conservation easement or other protective mechanism so that future clearing does not occur. Future clearing for vistas of the water or for piers, docks, or wetland walkways should not be permitted.
- To reduce impacts to nesting birds and other wildlife species that utilize forests for breeding, we recommend that clearing not occur April 1st to July 31st. This clearing recommendation would only protect those species during the breeding season; once trees are cleared the result is an overall loss of habitat.
- **In order to provide more informed comments and to make recommendations, the program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project.**
- The proposed project is adjacent to the Augustine State Wildlife Area managed by the Division of Fish and Wildlife. The State is concerned that the quantity and quality of wildlife habitat in the State Wildlife Area, particularly near the border, might be negatively affected by development activities, or by permanent land use changes, on the property in question. The developer should consult with the

Regional Wildlife Biologist (currently Rob Hossler) at (302) 834-8433 to minimize potential negative impacts of the proposed project on State Wildlife Area lands.

- Additionally, legal hunting activities take place in the Wildlife Area which can include firearm noise or dogs barking when pursuing game. This information should be disclosed to potential buyers.
- The forested/tidal marsh lands on the site are identified on the state designated Natural Area Inventory and are considered a State Resource Area (SRA). The natural area/SRA on this site is part of the larger Thousand Acre Marsh Natural Area and the Chesapeake and Delaware State Resource Area respectively. Adjacent to the parcel is the Thousand Acre Marsh Nature Preserve owned by the State and managed by the Division of Fish and Wildlife.

This area is highly attractive to waterfowl as well as other birds and the area is heavily hunted, especially within the Nature Preserve. Any development in this area must not impinge on current permitted uses on adjacent lands. Therefore, occupied structures are required to be at least 300 feet from the property line.

The Office of Nature Preserves appreciates the developer's efforts to mostly remain away from the natural area/SRA. However, it is important to provide an adequate buffer to the forested natural area/SRA. That said, the Office of Nature Preserves urges the developer to consider providing a larger buffer to the sensitive ecological communities on the site.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Herb Inden 739-3090

This project is located in Investment Level 3 according to the Strategies for State Policies and Spending. This site is also located in the New Castle County Growth Zone. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments will support growth in these areas but please be advised that the State may have other priorities in the near term future. It appears that this site is in a Level 3 area because of its proximity to the Augustine State Wildlife Area and the Thousand Acre Marsh Natural Area. We encourage you to design the site with respect for the environmental features which are present.

Division of Historical and Cultural Affairs – Contact: Alice Guerrant 739-5685

While this project is in Level 3, The Division of Historical and Cultural Affairs is opposed to this development because of the large number of historic properties in this vicinity listed in the National Register of Historic Places. The project will introduce additional adverse traffic, noise, and visual effects on these properties and destroy part of the historic agricultural setting of these properties. Windsor (N-12738) is across Dutch Neck Rd to the north, the John B. Nelson House (N-3939) is across the road to the west, and 8 listed properties are nearby, including 2 historic districts. There are a number of historic properties nearby that have not been evaluated for the National Register. The parcel contained the W. Cleaver House (N-12751; as noted on Beers Atlas of 1868), which has been demolished. Beers Atlas also shows two G. G. Cleaver houses, one in the middle of the property and one on the point, which both vanished prior to the USGS 15' Wilmington 1906 topographic map. There are probably archaeological remains associated with these three properties. In addition, the parcel is in a high potential area for both prehistoric-period and early historic-period (17th or 18th century) archaeological sites. Such sites will be destroyed by this project.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Cleaver houses, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of a cemetery here. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

In the event New Castle County approves this project, The DHCA would like the opportunity to examine the area for archaeological sites and learn something about their location, nature, and extent prior to any construction activities. They request that sufficient landscaping be used along the road to block the view of this development from the nearby historic properties.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) A traffic impact study will be required for this development. In that regard, the developer's traffic engineer has already contacted DelDOT regarding a scoping meeting. They expect to hold that meeting this month.

- 2) Dutch Neck Road is classified as a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 3) The plan for the development should include a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontage of the site.
- 4) If a buildable connection is possible, the developer should provide a stub street to the adjoining property on the south (Tax Parcel 13-004.00-008)
- 5) The developer's site engineer should contact the DelDOT Subdivision Manager for New Castle County, Mr. Pao Lin, regarding specific requirements for road improvements, streets and access. Mr. Lin may be reached at (302) 760-215

**The Department of Natural Resources and Environmental Control – Contact:
Kevin Coyle 739-9071**

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the

landowner and development team to protect sensitive resources through an appropriate site design.

Soils

According to the New Castle County soil survey Downer, Sassafras, Reybold-Sassafras complex, Leipsic-Reybold, Ingleside, Christiana, Othello, and Zekiah-Codorus complex were mapped on subject parcel. Downer, Reybold-Sassafras complex, Leipsic-and Reybold, and Ingleside are generally well-drained upland soils that have few limitations for development. However, some of the soils on this parcel (particularly those found in the southwest portion) have limitations associated with steep slopes (greater than 10%). Christiana (15-40%) and a variant of Downer (10-15% slope) are two soil types such exhibiting such limitations. Othello and Zekiah-Codorus are wetland associated (hydric) soils that have severe limitations for development. Othello is associated with nontidal wetlands while Zekiah-Codorus is associated with tidally-influenced wetlands.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of estuarine and palustrine wetlands along much of the north/south boundary and the eastern portions of the site.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet (preferably 300 feet) should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

Wetland Permitting Information

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and

Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Impervious Cover

Since residential development significantly increases the amount of impervious cover, leading to large volumes of contaminant-laden runoff which ultimately drain into streams or waterways, the applicant is strongly urged to pursue both natural and constructed Best Management Practices (BMPs) to reduce such impacts. Reducing the amount of constructed surface imperviousness (i.e., road, rooftops, and sidewalks) by planting/retaining more trees and/or the use of pervious paving surfaces (“pavers”) in lieu of asphalt or concrete are examples of ways to reduce such impacts. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.

TMDLs

A Total Maximum Daily Load (TMDL) is the maximum level of pollution for which a water quality limited water body can assimilate without compromising use and recreational goals such as swimming, fishing, drinking water, and shell fish harvesting. Although TMDLs are not planned for areas draining the C & D Canal watershed to date, the applicant is strongly advised to be proactive and employ best management practices (BMPs) and Best Available Technologies (BATs) as methodological mitigative strategies to reduce the likely degradative impacts associated with this development. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project, include practices that prevent or mitigate or minimize created surface imperviousness, maintenance of recommended wetland buffer widths (100 feet), and use of stormwater management treatment trains.

Water Supply

The information provided indicates that Artesian Water Company will provide well water to the proposed projects through a central public water system. DNREC files reflect that Artesian Water Company does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an

application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the New Castle County Department of Land Use. Contact the Department of Land Use Engineering Section at (302) 395-5470 for details regarding submittal requirements and fees.

A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to the Division of Soil and Water Conservation along with the \$195 NOI fee prior to plan approval.

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique. Green Technology BMPs, such as filtration, biofiltration and bioretention, must be

considered first for water quality management. Because this site has a discharge to tidal water, it will be eligible for a waiver of stormwater quantity management.

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption. Because the site has existing drainage ways that will be crossed during construction, special attention needs to be given to the construction sequencing and sediment trap locations so that these ditches do not become a conduit for discharging sediment-laden runoff during construction.

A Certified Construction Reviewer (CCR) may be required for this site during construction. The need for a CCR will be determined by New Castle County.

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will accomplish two things: it will preserve and expand the existing buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents by allowing them access to and views of the forest and stream.

If this subdivision is approved, all passive open space areas should be established with additional forests or meadow-type grasses. Once established, these ecosystems will provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Rare Species

DNREC has not surveyed this property; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site that would be affected by project activities. However, DNREC does have records of several rare plant species within wetlands associated with Thousand Acre Marsh and these species could

exist within the project area. They also have records of a state-rare fish species, *Apeltes quadracus* (fourspine stickleback). A portion of this project is adjacent to the Augustine Wildlife Area. Therefore, it is important that at least a 300-foot vegetative buffer remain along the edge of the marsh areas to protect water quality and public lands. There should not be lot lines or infrastructure within this buffer zone. In addition, the buffer should be placed in a permanent conservation easement or other protective mechanism so that future clearing does not occur. Future clearing for vistas of the water or for piers, docks, or wetland walkways should not be permitted.

To reduce impacts to nesting birds and other wildlife species that utilize forests for breeding, we recommend that clearing not occur April 1st to July 31st. This clearing recommendation would only protect those species during the breeding season; once trees are cleared the result is an overall loss of habitat.

Site Visit Request

In order to provide more informed comments and to make recommendations, our program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and to ensure that the project is environmentally sensitive. Please contact Bill McAvoy, Kitt Heckscher, or Robert Coxe at (302) 653-2880 to set up a site visit.

State Wildlife Management Area

The proposed project is adjacent to the Augustine State Wildlife Area managed by the Division of Fish and Wildlife. The State is concerned that the quantity and quality of wildlife habitat in the State Wildlife Area, particularly near the border, might be negatively affected by development activities, or by permanent land use changes, on the property in question. The developer should consult with the Regional Wildlife Biologist (currently Rob Hossler) at (302) 834-8433 to minimize potential negative impacts of the proposed project on State Wildlife Area lands. Additionally, legal hunting activities take place in the Wildlife Area which can include firearm noise or dogs barking when pursuing game. This information should be disclosed to potential buyers.

Nuisance Waterfowl

If stormwater management ponds are planned they may attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short

manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around ponds, are not as attractive to geese because they do not feel safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

State Resource Areas/Natural Areas

The forested/tidal marsh lands on the site are identified on the state designated Natural Area Inventory and are considered a State Resource Area (SRA). The natural area/SRA on this site is part of the larger Thousand Acre Marsh Natural Area and the Chesapeake and Delaware State Resource Area respectively. Adjacent to the parcel is the Thousand Acre Marsh Nature Preserve owned by the State and managed by the Division of Fish and Wildlife.

Natural Areas involve areas of land or water, or of both land and water, whether in public or private ownership, which either retains or has reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value.

State Resource Area lands include any open lands characterized by great natural scenic beauty, or whose existing openness, natural condition or present state of use, if retained, would maintain important recreational areas and wildlife habitat, and enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources, including environmentally sensitive areas.

This area is highly attractive to waterfowl as well as other birds and the area is heavily hunted, especially within the Nature Preserve. Any development in this area must not impinge on current permitted uses on adjacent lands. Therefore, occupied structures are required to be at least 300 feet from the property line.

The Office of Nature Preserves appreciates the developer's efforts to mostly remain away from the natural area/SRA. However, it is important to provide an adequate buffer to the forested natural area/SRA. That said, the Office of Nature Preserves urges the developer to consider providing a larger buffer to the sensitive ecological communities on the site.

Further, the Office of Nature Preserves looks forward to receiving the Critical Natural Areas report required by the County for this site.

Lastly, The Office of Nature Preserves respectfully requests the applicant to consider either donating the open space to the state, which may provide tax relief to the applicant, or placing a conservation easement on the open space. The open space would then be added to the Thousand Acre Marsh Nature Preserve. Please contact the Office of Nature Preserves at 302-739-9235 to discuss this option.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 20.3 tons (40,521.2 pounds) per year of VOC (volatile organic compounds), 16.8 tons (33,548.8 pounds) per year of NO_x (nitrogen oxides), 12.4 tons (24,753.0 pounds) per year of SO₂ (sulfur dioxide), 1.1 ton (2,203.4 pounds) per year of fine particulates and 1,694.8 tons (3,389,550.5 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 8.2 tons (16,344.1 pounds) per year of VOC (volatile organic compounds), 0.9 ton (1,798.3 pounds) per year of NO_x (nitrogen oxides), 0.7 ton (1,492.4 pounds) per year of SO₂ (sulfur dioxide), 1.0 ton (1,925.8 pounds) per year of fine particulates and 33.1 tons (66,255.2 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.2 tons (6,477.6 pounds) per year of NO_x (nitrogen oxides), 11.3 tons (22,530.8 pounds) per year of SO₂ (sulfur dioxide) and 1,661.6 tons (3,323,295.4 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
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Mobile	20.3	16.8	12.4	1.1	1694.8
Residential	8.2	0.9	0.7	1.0	33.1
Electrical Power		3.2	11.3		1661.6
TOTAL	28.5	20.9	24.4	2.1	3389.5

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 3.2 tons of nitrogen oxides per year and 11.3 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: John Rossiter 323-5365

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements:**

- Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
- Where a water distribution system is proposed for townhouse type dwellings it shall be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 feet spacing on centers are required.
- The infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Dutch Neck Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Townhouse 2-hr separation wall details shall be shown on site plans
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Milton Melendez 698-4500

The Delaware Department of Agriculture has no objections to the proposed application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas within Investment Level 3.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants.

To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Tree Mitigation

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a 1:1 ratio within the site and throughout the community. This will help to meet the community's forestry goals and objectives and reduce the environmental impacts to the surrounding natural resources. To learn more, please contact our offices at (302) 349-5754.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Department of Education – Contact: John Marinucci 739-4658

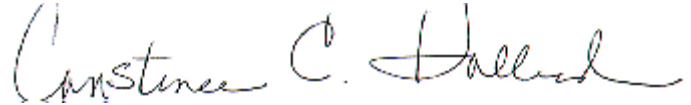
This proposed development is within the Colonial School District boundaries. DOE offers the following comments on behalf of the Colonial School District.

1. Using the DOE standard formula, this development will generate an estimated 132 students.
2. DOE records indicate that the Colonial School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Colonial School Districts' *secondary schools are at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
4. This development will create additional secondary student population growth which will further compound the existing shortage of space.
5. The developer is strongly encouraged to contact the Colonial School District Administration to address the issue of school over-crowding that this development will exacerbate.
6. DOE requests developer work with the Colonial School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the that school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in blue ink that reads "Constance C. Holland". The signature is fluid and cursive, with the first name "Constance" being the most prominent part.

Constance C. Holland, AICP
Director

CC: New Castle County